

REMARKS

Claims 1, 3-4, 6-7, 9-10, 13-16 and 18-23 are pending in the Subject Application. Claims 1, 3-4, 6-7, 9-10, 13-16 and 18-23 were allowed in the previous office action, but their allowance has since then been withdrawn. Thus, claims 1, 3-4, 6-7, 9-10, 13-16 and 18-23 stand rejected.

A. Rejection of claims 1, 3-4, 6-7, 9-10, 13-16 and 18-23 under 35 U.S.C. 103(a)

Claims 1, 3-4, 6-7, 9-10, 13-16 and 18-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,358,729 to Ohkuma *et al.* (hereinafter, "Ohkuma") in view of U.S. Patent No. 6,844,022 to Klingler *et al.* (hereinafter, "Klingler"). Applicant traverses this rejection for at least the following reasons and asserts that the Examiner has failed to establish a *prima facie* case of obviousness.

To determine the obviousness of a claim, an Examiner must make "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, "obviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (*citing In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). MPEP §2143.03 requires consideration of every claim feature in an obviousness determination. Furthermore, as set forth in MPEP §2142, the key to supporting any rejection under 35 U.S.C. § 103(a) is the clear articulation of the reason why the claimed invention would have been obvious. As the Supreme Court recently stated; "*there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.*" *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (emphasis added)).

For example, where the Examiner contends that the claimed invention is obvious because of the elements gleaned from the combined teachings of Ohkuma and Klingler, the Examiner must explain why it would have been obvious to one of ordinary skill in the art to arrive at the claimed invention. Applicant respectfully submits, however, that the Examiner has failed to clearly articulate the reasoning in support of the asserted

conclusion of obviousness in view of the Ohkuma and Klingler references, and that there is no reason why one of ordinary skill in the art would arrive at the claimed method. This is so because there is nothing in Ohkuma or Klingler that would teach or suggest a method of producing resistant starch at a whiteness level of at least 65, as recited in claim 1 and the claims that depend therefrom.

Claim 1 of the Subject Application sets forth a method of producing resistant starch comprising: selecting a reaction temperature of 140°C to 180°C; acidifying unmodified starch to a selected pH of about 1 to about 4 with hydrochloric acid, wherein said selected pH is optimum to convert said unmodified starch to resistant starch when at said reaction temperature; heating said acidified unmodified starch to said reaction temperature; and maintaining said acidified unmodified starch close to said reaction temperature until a maximized yield of resistant starch has been obtained while maintaining a whiteness level of at least 65.

The Examiner asserts that Ohkuma does not teach maintaining starch at the reaction temperatures disclosed until a whiteness level of at least 65 is obtained (Office Action, page 4, first paragraph), however, the Examiner further asserts that the results in Table 13 of Ohkuma (col. 23) show that a whiteness level of at least 65 can be obtained. Applicant agrees that Table 13 of Ohkuma shows that a whiteness level of at least 65 can be obtained, however, Ohkuma does not teach or suggest obtaining a whiteness of at least 65 while heating acidified unmodified starch to a reaction temperature of 140°C to 180°C, as recited in claim 1. In contrast, Ohkuma teaches away from a whiteness level of at least 65 at these reaction temperatures. For example, Ohkuma discloses a whiteness level of 50.5 at a temperature of 140°C and states that there is an inverse relationship between temperature and whiteness level (i.e., higher temperature results in lower whiteness levels). Thus, Ohkuma teaches that reaction temperatures higher than 140°C would result in starch having a whiteness of less than 50.5. Given this teaching by Ohkuma, it would not be obvious to one having ordinary skill in the art that the claimed whiteness levels (i.e., at least 65) could be achieved at the claimed reaction temperatures (i.e., 140°C to 180°C). In fact, from the express teaching in Ohkuma one of ordinary skill in the art would be inclined to do the opposite, i.e., to use a temperature lower than 140°C if one wanted to obtain a

whiteness of a least 65. Therefore, Ohkuma can be said to teach away from the claimed method.

In addition, Applicant submits that Klingler provides no teaching that would cure the deficiencies of Ohkuma. Instead, Klingler further supports the teachings of Ohkuma, which demonstrate achieving a whiteness at a temperature below 140°C. For example, Klingler teaches that starch treated with acid and heated at **100°C - 105°C** produces products that are white (col. 7-8, Table 2C).

Furthermore, the Examiner asserts "the optical properties in Table 2C after heating the starch/acid mixture for ten minutes at 105°C is reported as white. Even though results at higher temperature and heating time are not reported one of ordinary skill in the art would recognize that the color trend on increasing the heating time is toward white" (Office Action, page 4). Applicant respectfully disagrees. Applicant submits that Klingler provides no teaching that increased heating time or increased temperature will lead to increased whiteness. In contrast, Klingler teaches away from increased temperatures, i.e. such as the claimed range of 140° to 180°C. For example, Klingler recites,

[s]tarch having a moisture content of a maximum of about 15-20%...is heated in the presence of an acid...to a temperature **no higher than about 50-120°C**, preferably no higher than about 65-110°C., in particular no higher than about 80-100°C (col. 2, lines 12-14)

[s]uitable possible heating methods are, for example, using heating devices known to those skilled in the art, in which, in particular, heating of the starch to **temperatures above 120°C is to be avoided** (col. 2, lines 50-53)

Thus, one of ordinary skill in the art reviewing the combined teachings of Ohkuma and Klingler would not be inclined to heat starch at the claimed temperature range of 140°C to 180°C to achieve a whiteness level of at least 65.

For at least the reasons set forth herein, the combined teachings of Ohkuma and Klingler do not establish a *prima facie* case for obviousness. Accordingly, Applicant respectfully requests withdrawal of the rejection to claims 1, 3-4, 6-7, 9-10, 13-16 and 18-23 under 35 U.S.C. §103(a) in view of Ohkuma and Klingler.

B. Status of Other Related Cases

U.S. Patent Application Serial No. 10/959,792 was filed on October 6, 2004, and is entitled METHOD OF PRODUCING RESISTANT STARCH AND PRODUCTS FORMED THEREIN. A Final Office Action was mailed on November 26, 2008, which rejected claims 1, 3-4, 6-12, 16-22, 24-32 and 34-35.

CONCLUSION

Applicant submits that claims 1, 3-4, 6-7, 9-10, 13-16 and 18-23 of the Subject Application recite novel and non-obvious methods for producing resistant starch. In view of the remarks presented above, Applicant respectfully submits that the Subject Application is in condition for allowance. Accordingly, reconsideration of the rejection and allowance of all pending claims is earnestly solicited.

If the undersigned can be of assistance to the Examiner in addressing issues to advance the application to allowance, please contact the undersigned at the number set forth below.

Respectfully submitted,

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Date

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